

News

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Optimization-Based Computer-Aided Modelling and Design

Optimization-Based Computer-Aided Modelling and Design was the title of the first working conference of the IFIP Working Group 7.6 bearing the same title. It took place in The Hague, The Netherlands, on April 2–4, 1991. Local organizer was Faculty of Informatics of the Haagse Hogeschool. About 30 scientists from Czechoslovakia, France, Germany, Great Britain, Hungary, Switzerland and USA together with the same amount of participants from The Netherlands created reasonable framework for the extensive exchange of results and experience in the new area of system engineering. This area is constrained by classical system modelling and optimization methodology on one side, and by informatics and computer science on the other side.

According the aims of the sponsoring working group the applied aspects and impacts were strengthened in many presentations. Such trend is in accordance with the central idea of workable combination of achievements in the mentioned disciplines. The discussed topics concerned various decision support systems (model-based, optimization-based, intelligent) as well as knowledge-based and expert systems (including optimization-based reasoning). It should be realized in this respect that only appropriately implemented theoretical results may have the corresponding practical impacts. Among other things it means to imbed the pertinent solvers or algorithms into a convenient problem-oriented environment, which exhibits enough user-friendly options.

The number of reported cases confirmed the current trend of decision support system (DSS) approach. Roughly speaking, a DSS is an information system providing decisions which affect the target system. As a rule, it evaluates the effects of proposed decisions and generates the decisions satisfying user-formulated requirements. When designing an information system some higher degree of automation of an existing well-known manual system takes place. However, when designing a DSS it is unwise to fully automate the heuristic decision processes and care has to be taken when deciding which decision task is to be automated. A number of DSS projects in the past have failed due to assigning too many tasks to the machine. In this connection such topics as DSS prototyping, functionality aspects and target system simulation were discussed.

It is maybe interesting to note that DSS play nowadays important role in organization, management and business. In these areas one can observe large-scale implementations of the respective DSS. On the other hand, also highly specialized DSS implementations in technology and engineering are increasing. Hand in hand with improvement of computer hardware efficiency many new sophisticated DSS are developed which utilize latest theoretical achievements (optimization, expert features, etc.). And it can be concluded that the meeting organized by Prof. Beulens confirmed such general orientation. Sincere thanks of all participants belong to him and his colleagues for the smooth course of the conference which should become a regular item in the scientific event calendar. The presented papers will be published in a proceedings volume by Springer-Verlag.

Jaroslav Doležal

Fourth Viennese Workshop on Dynamic Economic Models and Optimal Control

Fourth Viennese Workshop on Dynamic Economic Models and Optimal Control took place in Vienna, on June 12–14, 1991. Traditional organizer was again Institute of Econometrics, Operations Research and System Theory of the University of Technology in Vienna. About 50 scientists from 14 countries together with at least 30 participants from the host country provided reasonable framework for the extensive exchange of results, opinions and experience in theoretical, methodological and implementational activities related to economic modelling and control. It is worth to note that such distant countries as Australia or Japan had numerous representation among the participants.

Accepted contributions were roughly divided into three parallel sections: *dynamic systems*, *optimal control*, and *differential games*. The treated topics ranged, as a rule, from purely theoretical questions to their economic counterparts including also certain specific real-world problems. Theoretic aspects dealt

for example with robust controller design, guaranteed outcome in multicriteria optimization or direct numerical solution of optimal control problems. Several contributions were devoted to the problem of understanding possible economical impacts of state constraints – interpretation of jumps in co-state variables.

Most discussed topics were directly related to economic problems. Let us mention capital accumulation, oligopoly regulation, consumer behaviour and investment policy modelling, etc. As not only the specialists for economic area were present, it was possible to discuss many items in broader circumstances trying to grasp better insight and understanding of the various problems. Especially during the organized panel discussion *Progress Without Empirical Foundation* often controversial opinions were presented. However, general conclusions emphasized the need for connection to reality and advocated for novel approaches reasonably reflecting the real-world. Modelling cannot develop without data and experimentation. Also in this field one cannot deter the reality and formal theoretical approach. However, it should be kept in mind that many phenomena well understood and treated in physics and technology are by their nature not so easily tractable in economics.

Nearly all presentations were followed by a short discussion of other participant, who had been asked for it by the organizers in advance. In this way the further discussion was stimulated. It should be mentioned that some economic problems were illustrated on non-typical examples: dynamics of extramartial affairs or periodic bloodsucking rates for vampires caused many smiles among participants.

The Workshop was generously sponsored by the organizers chaired by Prof. Feichtinger. All participants appreciated their effort to assure the smooth course of the meeting. Also Get Together party and Nostalgic Tram excursion to the famous Heurigen Evening in Grinzig highly contributed to cordial and friendly atmosphere of the Workshop. The presented papers will be reviewed and the selected collection published in a proceedings volume by North-Holland.

Jaroslav Doležal

From the Logical Point of View

an International Journal of Logic published by Czech Academy of Science

which appears three times a year. The journal is published in English. The journal is focused on general problems of philosophical and mathematical logic. Contributions devoted to the applications of logical research in other fields (e. g. artificial intelligence, semantics of natural language, cognitive science) will be accepted as well.

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